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Industrial Horizons

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Mississippi - Non-metropolitan Planning Board

PRESENTS XMAS TREE

Manufacturing Standards in the Industry

Manufacturing 1 p

Value added by manufacture increased by 167.5 per cent from 1947 to 1958 according to the Report from \$9,845,000 to \$242,701,000. "Value added" is defined as the value of manufactured products shipped less the cost of materials supplies, fuel, electric energy and contract work. It is considered an excellent indicator of economic activity. Montana's growth, percentagewise was surpassed only by that of certain Southwestern states. Manufacturing in the country as a whole increased by only 87.9 per cent Wyoming's increase was 73.4 per cent Idaho's 87.0 percent, Oregon's 99.7 per cent and North Dakota's was 85.3 per cent. Total average employment in manufacturing increased from 16,157 in 1950 to 20,056 in 1958, a gain of 24.1 per cent.

Population Growth

More Jobs

"In unusual lease negotiated by Eccle-
siaSport Worldwide, Inc., could set a pattern for year-round use of facilities built
for equestrian competition. The firm will
use the main building at the fairgrounds
in Pottsville, Pa., for 50 weeks of the
year, then take a two-week vacation while
the grand fair is in progress."

Oil Again State's Most Valuable Mineral In 1958

PETROLEUM: Oil was the most valuable mineral in 1958, with a value of \$8.4 billion, up 10 per cent over 1957. Total production was 1.3 billion barrels, up 1.5 per cent. Some 700 million barrels were produced by state-owned Montana Oil Co.

Crude oil production was 1.2 billion barrels, up 1.4 per cent, while the production of refined products was 142 million barrels, up 1.6 per cent.

Base Metals Down

With the exception of lead, all base metals declined in quantity and value in 1958. Lead output was down 1.8 per cent, or \$76.1 million, from \$78.1 million in 1957. Zinc output increased 1.7 per cent, or \$17.1 million. Most of the zinc produced comes from the Anaconda smelter. Tin output decreased 1.1 per cent, or \$12.9 million, from \$14.2 million in 1957.

During the first half of the year, copper production in Montana declined by 12 per cent. In 1958, total production remained at the same level. However, copper output increased toward the end of 1958, from a rate of 25 cents per pound in January to 26.5 cents in December, or to 27.5 cents a pound in October.

Review by Commodities

ALUMINUM: Producer below capacity. Anaconda Aluminum Co.'s plant at Colstrip, Mont., is depended on imported Canadian alumina that was supplied under contract by Kaiser Aluminum and Raybestos Metals Companies. The company continues to expand and research work on the technologic and economic feasibility of using Idaho clays as an alumina source at its \$8-million pilot plant at its Arco smelter.

BARIUM: Production by Baroid Sales Division, National Lead Co., was about half the 1957 total. Gypsum mine output was 260,000 at the Greenough (Missouri County) deposit, or 18,000 in rotary-drilling mud.

CEMENT: Both quantity and value increased over 1957. Ideal Cement Co. at Irondale was the only producer.

CHROMIUM: Concentrates (68.7 tonnes oxide) purchased for government stockpiles from American Chrome Corp., Montana, in 1957 reached over 90 per cent of the total 1,900,000 tons called for under the 1957 production contract. The remaining contracts are to be filled by the U.S. Steel Corp., chrome Eric Monet Corp., and Pacific Northwest pro-

duction.

CLAYS: Gypsum output, 600,000 tonnes, was 10 per cent higher than in 1957. Sulfuric acid production increased 10 per cent, or 1.1 million tonnes, from 1957. Gypsum production increased 10 per cent, or 1.1 million tonnes, from 1957.

COPPER: Total production and value declined 12 per cent, or \$1.1 billion, from 1957.

FLUORITE: Production and value declined 10 per cent, or \$1.1 billion, from 1957.

COPPER: Both output and the cost of production in Keweenaw County, Mich., declined 10 per cent, or \$1.1 billion, from 1957. Copper output increased 10 per cent, or \$1.1 billion, from 1957.

FLUORSPAR: A sharp increase in production was reported. Commercialization of Darkbank mine, 10,000-ton concentrator, cut other output. The company continued to refine high-grade fluorite produced from its Leafy Creek mine.

GOLD: The 22,000 ounces produced during 1958 represented a all-time low in the reported history of gold production in Montana. The decline in gold attributed to a decline in gold mining at Butte, and to a 31 per cent increase from 1957 in the number of operating gold mines (lode and placer combined). About 7 per cent of the 1958 total came from Silver Bow County. Over 100,000 cubic yards of gold-bearing stream gravel was excavated by a floating dredge on Prickly Pear Creek, near Jefferson City.

GYPSUM: Tonnage and value were slightly above 1957. Production was from the Shoshone mine of U. S. Gypsum Co. and the Hanover mine of Ideal Cement, both in Fergus County. The local use pattern remained unchanged: plaster, wallboard, lath and cement; only a small quantity was marketed for agricultural purposes.

IRON ORE: Development was highlighted by extensive diamond- and rotary-drilling programs. Minerals Engineering Co. sent 4,000 tons of ore from its Carter Creek deposit near Dillon for testing (see INDUSTRIAL HORIZONS, September/October, 1958). Ralls & Harris Bros. shipped 8,000 long tons of magnetite ore to Ideal Cement from its Iron Cross Mine near Townsend. Young-Montana Corp. made no shipments during the year from Starford.

LEAD: A sharp decline and lowest production since 1946 was reported. Sulfuric acid produced in Butte,

LIME: Output was 15 per cent higher than in 1957. Lime stone was calcined to quicklime by the Anaconda Company in Anaconda. Elston Lime Co. produced hydrated lime and calcium.

MANGANESE: Exports were received under the Federal low-grade manganese purchases program. Manganese Mn content of 17 per cent at Butte and 18 per cent at Pool Plant, or 89.6 per cent Montana manganese exported during 1958. The domestic manganese producer, or lot, produced manganese 16 per cent Mn content, which is expected to find market in the completion of the Butte-Pool manganese purchases program.

MARBLE: Production increased 10 per cent, or \$1.1 billion, from 1957.

METALS: Recovery of copper from

Montana-Dakota smeltering and the state's metal production totalled \$1.1 billion, or 10 per cent above 1957.

COPPER: Both output and the cost of production in Keweenaw County, Mich., declined 10 per cent, or \$1.1 billion, from 1957. Copper output increased 10 per cent, or \$1.1 billion, from 1957.

INDUSTRIAL HOR

MICAR: Electrical production from the Elmer Federer Galena Gateway coal deposit, 20 miles south of Ennis, was shipped to the GSA stockpile at Carter, S. D.

Petroleum Production Up

PETROLEUM and NATURAL GAS: Preliminary figures indicate recovery of crude oil advanced to 28.2 million barrels in 1958, (\$76.1 million). Natural gas output was 33.6 bil. cu. cubic feet, worth \$2.6 million. Increased ethane requirements and stronger demand for asphalt for highway construction caused Carter Oil Co. to expand its refinery at Billings. Increased production and proved reserves were the reasons' capacity of the Butte pipeline from Billings to Spokane was raised to 65,000 barrels per day.

PHOSPHATE ROCK: Production resumed an upward trend after experiencing a slight reversal in 1957. There were four major producers: Montana Phosphate Products Co., a subsidiary of Consolidated Mining & Smelting Co., Ltd. of Canada, shipped crude rock from its mine near Garrison to Trail, B.C., for manufacture into fertilizer. Victor Chemical Works converted Beaverhead County phosphate rock into elemental phosphorus at its Silver Bow reduction plant. J. R. Simplot Co. shipped phosphate rock from its mine in the Centennial Mountains east of Montana to its Pocatello fertilizer plant. Anaconda Co. continued to produce triple superphosphate fertilizer at the Anaconda reduction works. In addition, Anaconda Co. began operating its new \$1.5 million ammonium phosphate fertilizer plant at Anaconda with ammonia from Utah.

PYRITES: There was an increase in quantity and value of pyrites converted to sulfonic acid by the Anaconda Co. for use at its chemical fertilizer and metallurgical works.

SAND and GRAVEL: Continued strong demand resulted in increased production to 11.5 million tons (\$9.0 million). Heavy construction contributed to the industry.

SILVER: A decline of 18 per cent below 1957 was reported. Nearly 92 per cent of the state's total was produced on the Butte Hill.

STONE: Production declined 10 per cent, or \$1.1 billion, from 1957. It consists of 17,000,000 cu. ft. of sand and gravel used for construction. Much of the material is used for paving and concrete.

STELLUR: Recovery of copper from sulfuric acid in the Montana-Sulfur & Chemical Co. Billings, increased slightly.

Continued on next page

TALC: Tri-State Minerals Co., ground talc at its Baird mill and also in Ogden, Utah. Sierra Talc & Clay Co., shipped output from its Ennis Mine to Grand Island, Neb., for grinding. American Chemet, a subsidiary of Columbia Paint Co., continued to ship talc and zinc oxide from its East Helena plant. There was a substantial increase in the quantity and value of Montana talc mined in 1958. Active deposits are located in Beaverhead and Madison Counties.

URANIUM: A small tonnage was recovered from the Pryor Mountains during 1958, and exploration continued in other parts of the state. Production was shipped to the AFC buying station at Riverton, Wyo.

VERMICULITE: Output was slightly less than in 1957.

ZINC: Output decreased 37 per cent compared with 1957; Silver Bow County supplied 79 per cent of the total.

Other Montana minerals produced or explored in 1958 included: Antimony, arsenic, asbestos, beryllium, bismuth, cadmium, columbium, corundum, gem stones, graphite, molybdenum, nickel, platinum, pumicite, sodium sulphate, titanium, vanadium and zirconium.

Montana Barley To Be Used In Malting

Montana barley, when grown in suitable areas east of the Continental Divide, has been classified as acceptable for malting and brewing by the Malting Barley Improvement Association, a trade association in Milwaukee. Four years of experimental tests on the growing and malting of Montana Betzes barley have been generally satisfactory (see story on original tests in INDUSTRIAL HORIZONS, April, 1957).

Five Million Acres Grown

Malting barley is a new crop in Montana, according to the Association. Although Montana is the nation's third largest barley producing state, none has been acceptable for malting until this time. The successful variety, Betzes, was introduced from Poland in 1938 by the U.S. Department of Agriculture and was released by the Montana and Idaho Agricultural Experiment Stations in 1957. Over five million bushels of Betzes were produced in 1958 in the Triangle area of Montana and other irrigated areas of the state.

The major requirements that must be met if barley is to be used for malting are: pure lots of an acceptable malting variety, high percentage of plump kernels, low percentage of skinned and broken kernels, low protein content, high percentage germination, and bright color.

High protein content and excessive amount of skinned and broken kernels are likely to be major factors in determining the proportion of Montana Betzes that will enter malting channels. Proper fertilizer and irrigation practices will help to reduce protein content. Careful combining and handling procedures can effectively reduce the per cent of skinned and broken kernels.

Nearly all the 2.5 million bushels of Montana Betzes purchased for malting in 1958 is to be shipped to Eastern malting houses.

Windreel and Grain Blower Combine To Form New Industry

Another small business with growth potential for Montana.

Incorporation of the Montana Air-Reel Co., of Seobey on November 29, culminated several years of effort to find a local manufacturer for a Montana invention to serve regional agricultural markets.

The story goes like this:

Along about 1950, a Rudyard farmer named Curt Phillips invented an attachment for combine harvesters to replace the old belt type reel, which is inefficient when used in short grain. Jet blasts of air on the air-reel force the grain toward the cutting bar and thence, into the combine. The air-reel meets an age-old problem of harvesting by preventing the loss which occurs at the cutter bar when cutting short grain.

(Continued at top of next column)



A view of the Montana Feed and Grain Blower, manufactured in Whitetail, Mont.

A total of 32,890 acres of mustard seed was harvested in Montana in 1958, with a production of 13.3 million pounds, according to the U.S. Agricultural Marketing Service. Montana again produced nearly all the country's domestic mustard (about the same amount is regularly imported from Canada). Most of the Montana production is raised in Toole, Glacier, Liberty, Pondera and Teton counties. Despite the large production there is only one mustard-crushing plant in Montana—the Montana Vegetable Oil & Feed Co. in Great Falls, which crushes a small amount for feed. All the rest is shipped to Eastern crushing plants for the manufacture of edible mustard oil and protein. A new process for extracting mustard oil and protein from mustard seed has been developed by Prof. K. J. Goering of the Chemistry Department of Montana State College. A new company, Oil Seeds Products, Inc., has been formed to develop the process.

Windreel Proves Its Worth In Field

Actual performance records in the field show average savings of 15 bushels of grain per acre, and two bushels of barley, according to Charles Bowman, Assistant Professor of Agricultural Engineering at Montana State College. Bowman became interested in the product after Phillips contacted the Endowment and Research Foundation at MSC for help in improving and marketing the product, especially emphasizing its performance in actual harvesting operations.

Finding the "wind-reel," as it was then called, a product with potential, the MSC people and the owners of the patent endeavored to find a manufacturer for the product. A midwestern manufacturer was found, but the search was continued for a manufacturer closer to the primary marketing area in the Great Plains.

At the same time, a small Montana manufacturer of another agricultural product was looking for other products to make and sell.

Grain Blower Made in Fine Building

The Truck Grain Blower Co., had been started in 1930 by G. E. and E. J. Schlechter of Whitetail to manufacture their device to blow grain into storage bins and box cars. An excellent 5,800 sq. ft. concrete building was built in Whitetail in 1941 and equipped with modern machine tools to manufacture the product. The firm was purchased in 1954 by Harold and Stella Buretz, and the office was moved to Seobey.

The new owners expanded markets to include materials-handling operations all over the country. The Blower, renamed the Montana Grain and Feed Blower, is now in regular use from Oregon to New York. Specialized uses include delivery of sawdust and other bedding materials into two-story broiler houses, handling of bulk salt, and elevating dry ingredients to the mixer in a dog-food factory in Brooklyn. Advantages of this blower over other materials-handling methods are straight-up delivery, non-separation of ingredients and almost complete lack of damage to pelleted feeds.

State Planning Board Arranges Meeting

Both parties—wind reel and truck grain blower—had contacted the State Planning Board about their problems. Acting in a liaison function, the State Planning Board sponsored a meeting in Helena on November 18. From this meeting arose the new Montana Air-Reel Company.

The owners emphasize several positive features of a semi-rural Montana location for their manufacturing operation:

1. Large quantities of surplus labor are available from October through May, when seasonal farming operations shut down.
2. Much of this labor is mechanically skilled and permanently resident.
3. There is good transportation and a major market within a few hundred miles.
4. Small towns make good places to live.

We wish this new firm good luck. It's another attempt to provide more employment opportunities in Montana by making a product for local and national markets. This is a small business that may grow into an important agricultural implement company.

FARM INCOME DECLINE SHOWS NEED FOR INDUSTRIAL DEVELOPMENT

Montana's total personal income continued to increase to a new high of \$1,236 million for 1957, with a per capita income of \$1,896, according to estimates by the U. S. Department of Commerce. This growth, however, was at a smaller rate than that for either the United States or the four other Rocky Mountain States.

The reason for Montana's relative lag in income growth lies largely in one sector of the state's economy: agriculture. Farm proprietors' income in 1957 was 12 per cent less than in 1947, and farm wages were down 24 per cent. In 1947, farm income accounted for approximately 31 per cent of Montana's total income; in 1957, the proportion was 16 per cent.

Total farm personal income are in large part from all sources (before taxes) wages and salaries, proprietors' and self-employed income and transfer payments. Personal income is widely used as an index of business and economic activity.

Agricultural Decline Permanent

According to analysis of the decline in farm income contained in the latest Montana Business Review, published by the Bureau of Business and Economic Research of Montana State University, Missoula, by Maxine C. Johnson, "The decline in farm income in all probability is a permanent feature of regular post-World War II agriculture. It is no longer a source of total state

income expansion and expansion of non-farm personal income in Montana must come largely from the growth of primary and secondary, manufacturing industries such as lumbering and refining. These are the industries which create the demand for labor. The long-term growth of the economy will depend on these and other tertiary industries."

Industrial development continues with some success, but the lag in basic industries

is evident. The recent growth in the total personal income pattern indicates that the proportion of income from basic industries is smaller in Montana than in most other economies, filled with more diversified agriculture. And

CITY PLANNING AMENDMENTS TO BE SUBMITTED TO LEGISLATURE

Amendments designed to clarify the enabling legislation for City-County Planning Boards will be submitted to the 1959 Legislature by the Association of Montana Planning Boards, according to H. Cleveland Hall, president of the Association.

The proposed amendments will tie City County Planning Boards closer to the governing bodies which create them—City Councils and Boards of County Commissioners. They were adopted at the Statewide City Planning Meeting held in Helena last October 25 by 58 persons representing 11 communities with City-County Planning Boards.

Amendments Meet Objections

"Since the legislation went into effect on July 1, 1957, 14 City-County Planning Boards have been formed in Montana," Hall stated. "However, objections have been expressed to certain provisions in the law. The October meeting was held to consider these objections and to prepare suitable amendments to meet them. All the amendments were adopted unanimously by the group. We feel they will strengthen planning in Montana."

"Montana is ahead of surrounding states in the ability to channel the growth of our cities for the benefit of all," Hall continued. "Authorities have stated that we have some of the best planning legislation in the country. However, the proposed amendments are necessary if our planning boards are to operate more effectively and within the law."

Copies of the proposed amendments are available from the following Presidents of City-County Planning Boards:

CITY-COUNTY PLANNING BOARDS IN MONTANA

Board	President	Address
1. Billings-Yellowstone	E. C. Nielsen	234 Lewis
2. Bozeman-Gallatin	H. D. Korslund	Box 113
3. Butte-Silver Bow	T. S. Yeazey, Jr.	Box 427
4. Columbia Falls-Flathead	George A. Shay	Box 505
5. Glasgow-Valley	G. F. Kielstrup	City Hall
6. Great Falls-Cascade	H. Cleveland Hall	Box 1744
7. Havre-Hill	Vance Murphy	1202 2nd St.
8. Helena-East Helena-Lewis & Clark	H. S. Dotson	Granite Bldg.
9. Kalispell-Flathead	Charles L. Hash	Box 686
10. Libby-Lincoln	Paul Evans	Libby
11. Livingston-Park	Richard A. Buelke	1218 W. Cambridge
12. Miles City-Custer	J. R. Porten	321 Main
13. Missoula-Missoula	V. R. Peterson	Box 49
14. Whitefish-Flathead	Henry Irwin	Whitefish

Copies also available from State Planning Board Officers not yet elected; name listed is contact.

These activities are expanding faster, inasmuch as these are basic industries like mining and manufacturing. How long can this imbalance continue?

Growth Must Come from Manufacturing

Second, it is likely that the bulk of expansion in Montana's basic industries will have to occur in manufacturing. Metal mining may well have reached its peak in 1955 and 1956, and petroleum production, while expanding, will not soon attain great importance.

"Thus," she concludes, "the need for an accelerated expansion in manufacturing activities if Montana is to continue to grow and to prosper is again demonstrated."

Organization of a new \$250,000 industry was announced in December by Treasure State Industries. The expanded shale plant will process gray shale into a prime ingredient for light-weight aggregate used in the rapidly growing pre-stressed and pre-cast concrete business. The bloating of the shale will be produced by a 7x120' rotary gas-fired kiln which will heat the raw shale to a temperature of 2100° F. The expanded shale will be crushed and screened to the exact specifications of customers. The project was originally investigated as a potential industry by the Great Falls Chamber of Commerce, in conjunction with the Montana Bureau of Mines and Geology (see *INDUSTRIAL HORIZONS*, Sept., 1956).

MONTANA STATE PLANNING BOARD

State Office Building

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